# P28025.ST25.txt SEQUENCE LISTING

```
<110>
        RIKEN
        MIYAWAKI, Atsushi
        NAGAI, Takeharu
<120>
       Fluorescent Indicator Using FRET
<130>
        P28025
<140>
        10/538,772
<141>
        2005-06-10
<150>
        PCT/JP2003/015790
        2003-12-10
<151>
<150>
        JP2002-357768
<151>
        2002-12-10
<160>
        45
<170>
        PatentIn version 3.3
<210>
<211>
        26
<212>
        PRT
<213>
        animal
<400>
       1
Lys Arg Arg Trp Lys Lys Asn Phe Ile Ala Val Ser Ala Ala Asn Arg 1 \hspace{1cm} 10 \hspace{1cm} 15
Phe Lys Lys Ile Ser Ser Ser Gly Ala Leu 20 25
<210>
       2
20
<211>
<212>
        PRT
<213>
        animal
<400>
        2
Ala Arg Arg Lys Trp Gln Lys Thr Gly His Ala Val Arg Ala Ile Gly
Arg Leu Ser Ser
20
       3
20
<210>
<211>
<212>
        PRT
<213>
        animal
<400>
        3
Ala Arg Arg Lys Leu Lys Gly Ala Ile Leu Thr Thr Met Leu Ala Thr 10 \hspace{1cm} 15
                                          10
```

```
Arg Asn Phe Ser 20
<210>
<211>
<212>
        17
        PRT
<213>
        animal
<400>
Gly Val Arg Asn Ile Lys Ser Met Trp Glu Lys Gly Asn Val Phe Ser 10 15
Ser
        5
20
<210>
<211>
<212>
        PRT
<213>
        animal
<400>
        5
Ala Arg Arg Lys Leu Lys Ala Ala Val Lys Ala Val Val Ala Ser Ser 1 10 15
Arg Leu Gly Ser
20
<210>
<211>
        6
       26
<212>
        PRT
<213>
        animal
<400> 6
Phe Met Asn Asn Trp Glu Val Tyr Lys Leu Leu Ala His Ile Arg Pro 1 5 10 15
Pro Ala Pro Lys Ser Gly Ser Tyr Thr Val
20 25
<210>
<211>
<212>
        24
        PRT
<213>
        animal
<400>
Ala Arg Lys Glu Val Ile Arg Asn Lys Ile Arg Ala Ile Gly Lys Met 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
Ala Arg Val Phe Ser Val Leu Arg
               20
```

```
<210>
       26
<211>
<212>
       PRT
<213>
       animal
<400>
       8
Leu Arg Arg Leu Ile Asp Ala Tyr Ala Phe Arg Ile Tyr Gly His Trp 10 \hspace{1cm} 15
Val Lys Lys Gly Gln Gln Gln Asn Arg Gly 20 25
       9
27
<210>
<211>
<212>
       PRT
<213>
       animal
<400>
       9
Arg Gly Lys Phe Lys Val Ile Cys Leu Thr Val Leu Ala Ser Val Arg 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
Ile Tyr Tyr Gln Tyr Arg Arg Val Lys Pro Gly 20 25
<210>
       10
<211>
<212>
       28
       PRT
       animal
<213>
<400>
       10
Leu Arg Arg Gly Gln Ile Leu Trp Phe Arg Gly Leu Asn Arg Ile Gln 10 15
Thr Gln Ile Lys Val Val Asn Ala Phe Ser Ser Ser 20 25
       11
21
<210>
<211>
<212>
       PRT
<213>
       animal
<400>
Lys Gln Leu Glu Lys
<210>
      12
```

```
P28025.ST25.txt
```

```
<211> 21
<212>
      PRT
<213>
       animal
<400> 12
Thr Glu Lys Met Trp Gln Arg Leu Lys Gly Ile Leu Arg Cys Leu Val 1 5 10 15
Lys Gln Leu Glu Lys
             20
       13
23
<210>
<211>
<212>
       PRT
       animal
<213>
<400>
      13
Lys Arg Arg Ala Ile Gly Phe Lys Lys Leu Ala Glu Ala Val Lys Phe 1 10 15
Ser Ala Lys Leu Met Gly Gln
             20
      14
<210>
<211>
       28
<212>
       PRT
<213>
       animal
<400> 14
Ile Lys Pro Ala Lys Arg Met Lys Phe Lys Thr Val Cys Tyr Leu Leu 1 5 10 15
Val Gln Leu Met His Cys Arg Lys Met Phe Lys Ala 20 25
<210>
       15
<211>
       20
<212>
       PRT
<213>
       animal
<400>
      15
Ile Asp Leu Leu Trp Lys Ile Ala Arg Ala Gly Ala Arg Ser Ala Val
Gly Thr Glu Ala
             20
<210>
       16
<211>
       27
<212>
       PRT
<213>
       animal
```

<400> 16

Lys Ala His Lys Ala Ala Thr Lys Ile Gln Ala Ser Phe Arg Gly His  $10 \hspace{1.5cm} 15$ 

Ile Thr Arg Lys Lys Leu Lys Gly Glu Lys Lys 20 25

<210> 17

<211> 24

<212> PRT

<213> animal

<400> 17

Lys Thr Ala Ser Pro Trp Lys Ser Ala Arg Leu Met Val His Thr Val  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Ala Thr Phe Asn Ser Ile Lys Glu 20

<210> 18

<211> 25

<212> PRT <213> animal

<400> 18

Lys Lys Lys Lys Arg Phe Ser Phe Lys Lys Ser Phe Lys Leu Ser  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Phe Ser Phe Lys Lys Ser Lys Lys 20 25

<210> 19

<211> 24

<212> PRT

<213> animal

<400> 19

Lys Lys Lys Lys Phe Ser Phe Lys Lys Pro Phe Lys Leu Ser Gly  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Leu Ser Phe Lys Arg Asn Arg Lys 20

<210> 20

<211> 31

<212> PRT

<213> animal

<400> 20

```
P28025.ST25.txt
Lys Gln Gln Lys Glu Lys Thr Arg Trp Leu Asn Thr Pro Asn Thr Tyr 1 5 10 15
Leu Arg Val Asn Val Ala Asp Glu Val Gln Arg Asn Met Gly Ser 20 25 30
<210>
        21
<211>
        21
<212>
<213>
        PRT
        animal
<400>
        21
Lys Asp Gln Val Ala Asn Ser Ala Phe Gln Glu Arg Leu Arg Lys His
1 10 15
Gly Leu Glu Val Ile
<210>
        22
<211>
<212>
        21
        PRT
<213>
        animal
<400>
        22
Tyr His Arg Leu Arg Asp Leu Leu Leu Ile Val Lys Arg Ile Val Glu
1 10 15
Leu Leu Gly Arg Arg
20
<210>
       23
<211>
        23
<212>
       PRT
<213>
        animal
<400>
        23
Gln Gln Leu Ala Thr Leu Ile Gln Lys Thr Tyr Arg Gly Trp Arg Cys 10 15
Arg Thr His Tyr Gln Leu Met 20
<210>
<211>
        24
       24
<212>
        PRT
<213>
        animal
<400>
        24
Arg Ala Ala Cys Ile Arg Ile Gln Lys Thr Ile Arg Gly Trp Leu Leu 10 15
```

```
Arg Lys Arg Tyr Leu Cys Met Gln 20
```

25 12 <210>

<211> <212>

**PRT** <213> animal

<400> 25

Ile Asn Leu Lys Ala Ala Leu Ala Lys Lys Ile Leu  $1 \hspace{1cm} 5 \hspace{1cm} 10$ 

26 26

<210> <211>

<212> PRT

<213> animal

<400> 26

Gly Ile Gly Ala Val Leu Lys Val Leu Thr Thr Gly Leu Pro Ala Leu

Ile Ser Trp Ile Lys Arg Lys Arg Gln Gln

<210> 27

<211> <212> 30

PRT <213> animal

<400> 27

His Ser Gln Gly Thr Phe Thr Thr Ser Asp Tyr Ser Lys Tyr Leu Asp 1 5 10 15

Ser Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr 20 25 30

<210> 28

<211> 27

<212> PRT

<213> animal

<400> 28

His Ser Asp Gly Thr Phe Thr Ser Glu Leu Ser Arg Leu Arg Asp Ser 1 5 10 15

Ala Arg Leu Gln Arg Leu Leu Gln Gly Leu Val 20 25

<210>

<211> 28

```
<212>
        PRT
<213>
        animal
<400>
        29
His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
10 15
Met Ala Val Lys Lys Tyr Leu Asn Ser Ile Leu Asn 20 25
<210>
        30
<211>
        33
<212>
        PRT
<213>
        animal
<400>
        30
Tyr Ala Asp Gly Thr Phe Ile Ser Asp Tyr Ser Ala Ile Met Asn Lys 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
Ile Arg Gln Gln Asp Phe Val Asn Trp Leu Leu Ala Gln Gln Gln Lys 20 25 30
Ser
        31
17
<210>
<211>
<212>
        PRT
<213>
        animal
<400>
Lys Leu Trp Lys Lys Leu Leu Lys Leu Leu Lys Leu Leu Lys Leu 10 \phantom{000} 15
Gly
<210>
        32
<211>
<212>
        PRT
<213>
        eucaryotic cell
<400>
         32
Lys Lys Lys Arg Lys 5
        33
26
<210>
<211>
```

<212>

PRT <213> eukaryotic cell

```
<400> 33
```

Met Leu Arg Thr Ser Ser Leu Phe Thr Arg Arg Val Gln Pro Ser Leu 10 15

Phe Arg Asn Ile Leu Arg Leu Gln Ser Thr 20 25

```
<210> 34
<211> 4
<212> PRT
<213> eukaryotic cell
<400> 34
```

Lys Asp Glu Leu 1

```
<210> 35
<211> 3
<212> PRT
<213> eukaryotic cell
<400> 35
```

Ser Lys Phe 1

```
<210> 36
<211> 4
<212> PRT
<213> eukaryotic cell
```

<220>
<221> Variant
<222> (1)..(4)
<223> Xaa = any amino acid

Cys Ala Ala Xaa 1

36

<400>

<210> 37 <211> 2 <212> PRT <213> eukaryotic cell <400> 37 Cys Cys 1

<210> 38 <211> 3 <212> PRT

#### P28025.ST25.txt <213> eukaryotic cell <220> <221> Variant <222> <223> (1)..(3)Xaa = any amino acid <400> 38 Cys Xaa Cys 1 <210> 39 <211> <212> 4 PRT <213> eukaryotic cell <220> <221> Variant <222> (1)..(4)<223> each Xaa = independently any amino acid <400> 39 Cys Cys Xaa Xaa 1 <210> 40 <211> 29 <212> DNA <213> Artificial sequence <220> <223> primer <400> 40 attggatccc atggtgagca agggcgagg 29 <210> 41 <211> 28 <212> DNA <213> Artificial sequence <220> <223> primer <400> 41 catgcatgcg ggcggcggtc acgaactc 28 <210> 42

<210> 42 <211> 28 <212> DNA <213> Artificial sequence <220> <223> primer

<400> gctggta	42 acca tggtgagcaa gggcgagg	28
	43 33 DNA Artificial sequence	
<220> <223>	primer	
<400> gcagaat	43 ttct cacttgtaca gctcgtccat gcc	33
<210> <211> <212> <213>	44 29 DNA Artificial sequence	
<220> <223>	primer	
	44 tccc atggtgagca agggcgagg	29
<210> <211> <212> <213>	45 45 DNA Artificial sequence	
<220> <223>	primer	
<400> gctggta	45 acca tcgacctcat cagtgatccc ggcggcggtc acgaa	45